

for blue

# Work Order ID 62630



Tuesday, October 05, 2010 1:01:10 PM

Page 1

Item ID: D206-667-103TRN

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Turning DetailL

Start Date: 10/5/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 10/19/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date: 10/10/05

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D206-667-143

Rev C

100

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA087□2-Turn first side as per Folio FA087□3-File down transition lines smooth.

SA 10/10/21

110

0.00



QCI- Inspect dimensions to dimension sheet

QC

Memo

0.00

Quality Control

SA 10/10/21

120

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA087□2-File down transition lines smooth.  
□  
3-Remove sand and plugs

SA 10/10/21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

SL 10/10/21

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

SL 10/10/21

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

SPD  
10-10-21

①

W/O:		WORK ORDER CHANGES					
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Page 3

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Revision ID:

Item Name: Crosstube Turning DetailL

Stop



Start Date: 10/5/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 10/19/2010 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

DP

10-10-21

170

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and stock in kanban rack ☐ Location: LG

SAD  
10-10-21

①

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/10/22  
ME  
10-10-21

W/O:		WORK ORDER CHANGES					
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**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, October 05, 2010 1:01:14 PM

Page 1

Work Order ID: 62630



Parent Item: D206-667-103TRN



Parent Item Name: Crosstube Turning DetailL

Start Date: 10/5/2010

Required Date: 10/19/2010

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A 08-03-06 new issue DD verified by:ec  
IPP Rev B 08.04.02 removed polish EC verified by DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D6002-115		Manufactured	No			110	Each	50.0000	1	1			
Crosstube Material													

SA 10/10/21

Location	Loc Qty	Loc Code
LG	50	
34684	1	
✓ 34776	49	

1

W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries



<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	62630
<b>Description:</b> Crosstube Assembly (206L High Fwd)	<b>Part Number:</b>	D206-667-143
<b>Inspection Dwg:</b> D206-667-143 Rev: C		Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.244	/			
	1.982	+0.005/-0.000	1.984	/			
	2.019	+0.005/-0.000	2.024	/			
	2.058	+0.005/-0.000	2.063	/			
	2.097	+0.005/-0.000	2.102	/			
	2.136	+0.005/-0.000	2.139	/			
	2.176	+0.005/-0.000	2.181	/			
	2.201	+0.005/-0.000	2.206	/			
	0.125	+/-0.010	.120	/			
	0.400 x 30°	+/-0.010	.40018	/			
	R0.063	+/-0.010	R.063	/			
	R0.500	+/-0.010	R.500	/			
	4.438	+/-0.030	4.447	/			
SIDE B	104.98	+/-0.020	105.00	/			
	2.240	+0.005/-0.000	2.245	/			
	1.982	+0.005/-0.000	1.985	/			
	2.019	+0.005/-0.000	2.024	/			
	2.058	+0.005/-0.000	2.064	/			
	2.097	+0.005/-0.000	2.102	/			
	2.136	+0.005/-0.000	2.140	/			
	2.176	+0.005/-0.000	2.181	/			
	2.201	+0.005/-0.000	2.204	/			
	0.125	+/-0.010	.124	/			
	0.400 x 30°	+/-0.010	.400130	/			
	R0.063	+/-0.010	R.063	/			
	R0.500	+/-0.010	R.500	/			
	4.438	+/-0.030	4.445	/			

<b>Measured by:</b>	SA	<b>Audited by:</b>	JL	<b>Preliminary Approval:</b>	N/A
<b>Date:</b>	10/10/21	<b>Date:</b>	10/10/21	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	04.05.06	New Issue (P/O D206-667-103)	KJ/RF	
B	06.03.09	Dwg Rev updated	KJ/JLM	
C	10.09.13	Dwg Rev updated	KJ	

W/O:		WORK ORDER CHANGES					
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Item	Qty -143	Part Number	Description
1	X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

# **GENERAL NOTES:**

- MATERIAL: MANUFACTURED FROM D6002-115  
FINISHED LENGTH = 104.98±0.020
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: 15.5 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SEE  
R  
F  
UNCO  
SUBJ  
W  
W  
NO. 62630  
8/10-10-05

RELEASED  
08/11/06

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	DP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	DP	DRAWING NO.	REV. C
MFG. APPR.	DP	D206-667-143	SHEET 1 OF 4
APPROVED	DP	TITLE	SCALE
DE APPR.	DP	CROSSTUBE ASSY (206L HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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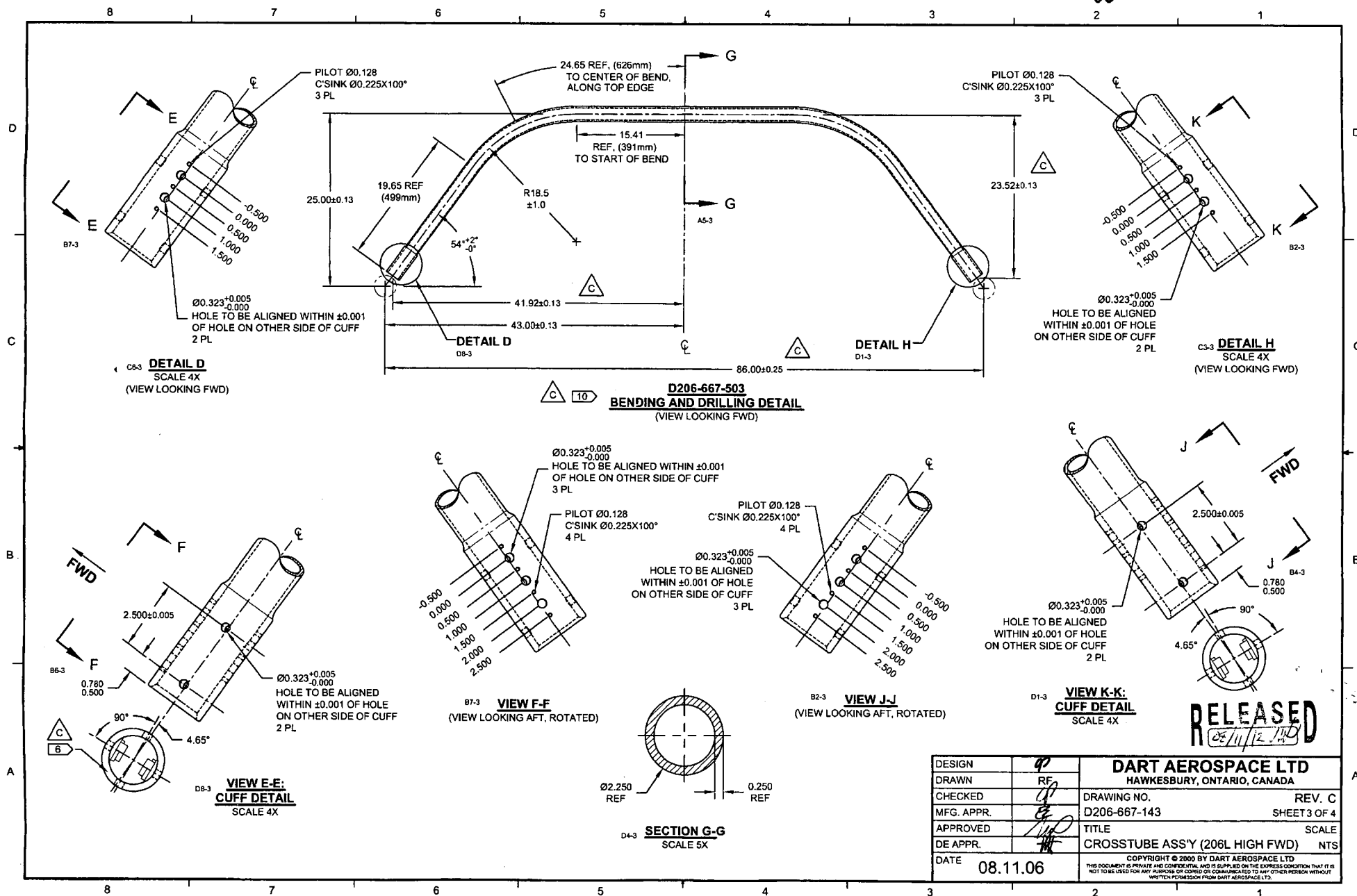
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WLO 62430



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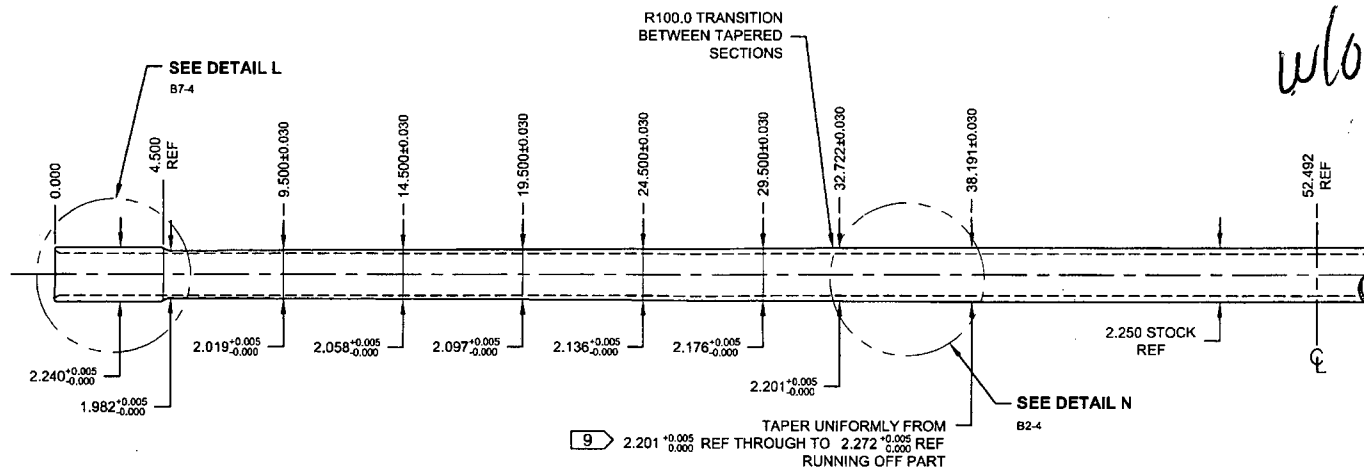
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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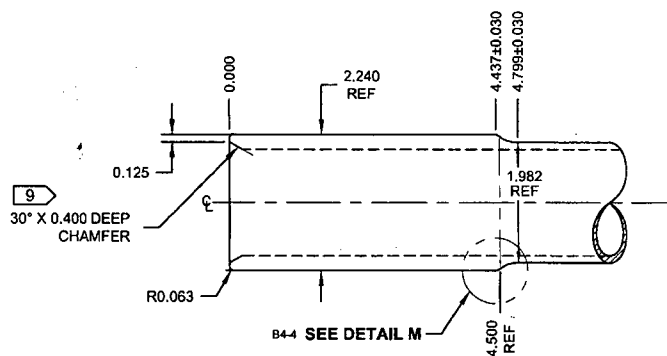
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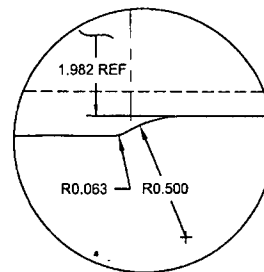




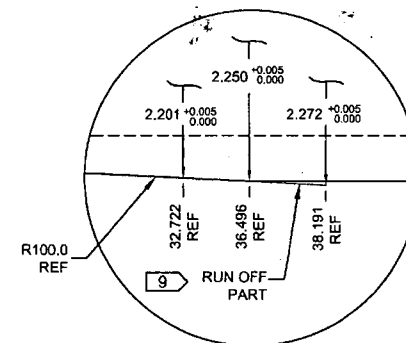
**TURNING DETAIL**



**DETAIL L:  
CROSSTUBE CUFF**  
D7-4 NOT TO SCALE



**DETAIL M:  
CUFF TRANSITION**  
A6-4 NOT TO SCALE



**DETAIL N:  
TAPER RUN-OFF**  
C4-4 NOT TO SCALE

**RELEASED**

DESIGN	9	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	9	DRAWING NO.	REV. C
MFG. APPR.	9	D206-667-143	SHEET 4 OF 4
APPROVED	9	TITLE	SCALE
DE APPR.	9	CROSSTUBE ASS'Y (206L HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

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